EPA Arsenic Web Cast
Arsenic Implementation in NH

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10-20-2004

NH Overview- Where The Need Is

- **Typical System with Arsenic - very small**
  - 300-700’ bedrock well
  - Average: 50-75+- customers

  – **700 Community Systems**
    - 10 with arsenic treatment
    - 100 systems between 10-49 ppb

  – **425 NTNC Systems**
    - 7 with arsenic treatment
    - 30 systems between 10-49 ppb

  – **Competing ions: No silica, phosphate, vanadium, sulfate**
  – **Assumption: Adsorptive Media for Most Systems**

NH Policies

- **Professional Engineer Not Required**
  - Unless over 1,000 people
- **Pilot Study Not Required**
  - We are cautiously confident that adsorptive medias will work.
  - If empty bed contact time (EBCT) chosen is under 4-5 minutes, the utility is limiting itself to a very few media suppliers.
- **V & E**
  - No Variances
  - Possible Exemption, but unlikely
- **Radon Floor Space Evaluation - Future**

Cooperated with Media Companies

- **Pre-identified those systems with likely arsenic compliance problem**
  - Developed arsenic mailing list.
  - Shared list with media sales reps. & pump companies
    - Private sector sales efforts help to insure that utilities know the problem and have been exposed to at least one solution.
- **Agency used mailing list to advertise**
  - Our own numerous education programs.
  - US EPA Demo Treatment project availability

Arsenic Speciation Equipment

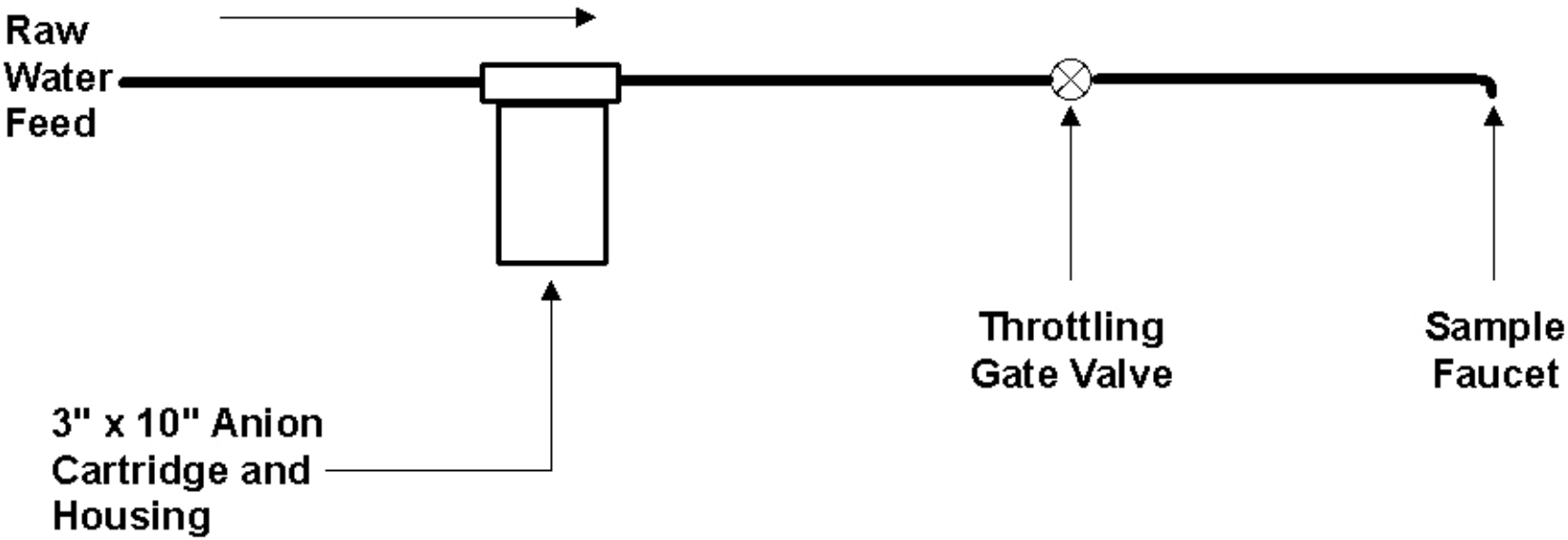
- **Agency purchased two 3”x10” anion exchange cartridges, cartridge housings, and valves to allow utilities to do speciation sample collection on each source.**
  - Utilities appreciate the help
  - Identifies the importance of speciation.

- **Speciation: Two arsenic samples processed**
  - 1. Total arsenic
  - 2. Arsenic after anion treatment = Ar^{+3}

    T. Arsenic – $Arsenic^{+3}$ = $Arsenic^{+5}$

    Ex. 35 -- 15 = 20

Speciation Sample Equipment



Reducing The Fear Factor, Adsorptive Media

- Developed a comprehensive list of adsorptive media. Recently expanded list to include meaningful media characteristics (Capacity(relative), pH dependence, EBCT etc).
  - See list in the appendix.

Reducing The Fear Factor, Tours of Existing Arsenic Systems

- **Developed a description of each arsenic treatment installation.**
  - Conducted group field tours
  - Facilitated individual visits to existing facilities

Interaction With EPA

- **Provided Critique of Arsenic Treatment Design Manual**

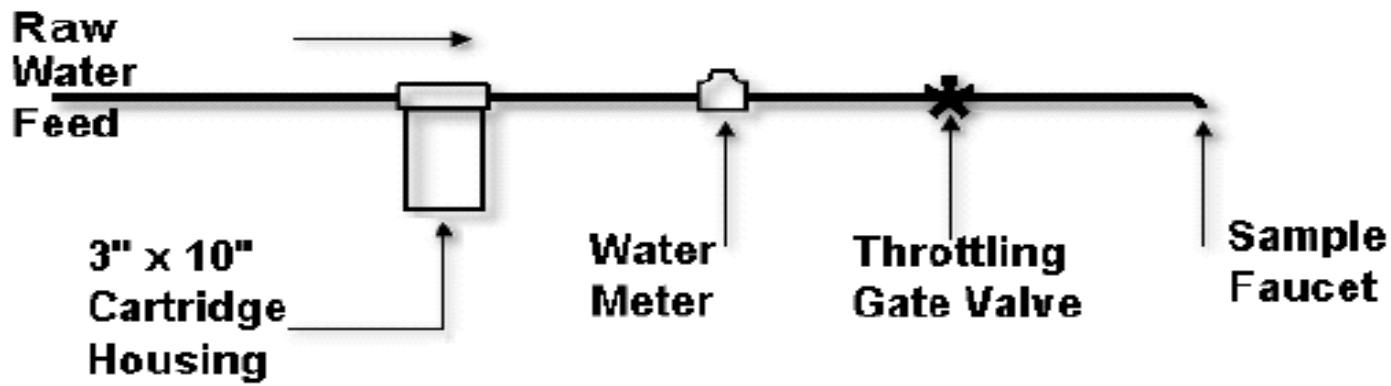
- **EPA Arsenic Treatment Demo Projects**
  - Good staff training
  - Good position to counteract utility resistance

Evaluating Media

- Provided detailed description to operators of how to conduct a small, 3”x10” cartridge scale, pilot study to determine the cost effectiveness of other adsorptive medias.
  - Careful record keeping
  - Breakthrough monitoring

Media Evaluation

Mini Pilot Plant for Evaluating Other Adsorptive Media



Note: Sequence is not important.

Design Criteria -Policy

1. **Develop an Alternative Supply**
2. **Bureau Suggests Series Equipt. Configuration**
   To achieve lowest long term media cost
3. **Bureau Suggests Preoxidation**
   Extends media life
4. **Spent Media Removal**
   Sidewall port
   Extra head room above tank if no sidewall outlet
5. **For Highly Varying TDH -** Flow constrictor or size media tank on initial pump flow
6. **Place Arsenic T. Before Aeration–**CO_2 beneficial

Arsenic Enforcement

- **Periodic Enforcement Letters:**
  - Identifying new MCL
  - System likely in violation
  - Effective date
- **October 2005, Status Survey**
- **Orders / Penalties in January 2006**

Private Well

- **News Sidebar. Always mention the importance of arsenic testing for private wells in all newspaper or TV stories.**
  - Lessens the focus on the PWS violation
  - Aids the private well owner

- Comments on media
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- Any Questions.